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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,284	02/18/2004	John H. Santhoff	048CIP-121	4204
44279	7590	09/20/2007		
PULSE-LINK, INC. 1969 KELLOGG AVENUE CARLSBAD, CA 92008			EXAMINER JAGANNATHAN, MELANIE	
			ART UNIT	PAPER NUMBER
			2616	
			MAIL DATE	DELIVERY MODE
			09/20/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<p align="center"><b>Office Action Summary</b></p>	Application No. 10/782,284	Applicant(s) SANTHOFF ET AL.	
	Examiner Melanie Jagannathan	Art Unit 2616	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 24 August 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

- A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 8/24/2007 has been entered.
- Claims 1-20 are pending.

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

2. Claims 1-4, 6-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerakoulis et al. US 7,187,647 in view of Jones et al. US 7,099,375 .

Regarding claims 1-2, 6-7, the claimed providing a ultra wideband device structured to transmit at a chip rate is disclosed by Gerakoulis by ultra wideband transceiver in UWB system.

Gerakoulis does not disclose receiving a plurality of pulses at second chip rate and interpolating and converting second chip rate pulses to first chip rate. Jones discloses a chip rate invariant detector for use in wireless spread spectrum system that can accommodate two or more chip rates where the detector segments the signals and filters in order to have pulses in uniform sizes.

Regarding claims 3, 8, the claimed time duration that ranges from about ten picoseconds to about one millisecond is disclosed by 6 GHz ultra wideband link.

Regarding claims 4, 9, the claimed OFDM ultra-wideband pulses is disclosed by Gerakoulis by physical UWB link is divided and the system uses OFDM.

3. Claims 11-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al. US 7,027,425 in view of Bonhke et al. US 6,738,443.

Regarding claims 11-14, 19-20, the claimed generating a first and second data frame to transmit at first and second data rates is disclosed by Fullerton in system transmitting impulse radio signals at different data rates.

Fullerton discloses all of the limitations except for the claimed either or both first and second frames comprised of ACG control, power level, ACG tuning and synchronization sections. Bohnke discloses a preamble structure in communications between an OFDM transmitter and receiver. The preamble includes fields for automatic gain control and timing synchronization. The automatic gain control is adjusted. See column 1, lines 25-36, column 2, lines 52-58. Bohnke discloses optimization of these fields regarding the time domain signal (power) properties (Figure 7). See column 3, lines 11-19. At the time the invention was made it would have been obvious to modify Fullerton to include the above preamble fields of Bohnke. One of ordinary skill in the art would be motivated to do so for improve auto-correlation properties of the receiver synchronization.

Regarding claim 15-17, Fullerton discloses all of the limitations except for the claimed synchronization section allows for receiver to obtain synchronism between a received signal and template, receiver and transmitter and synchronize a frequency and time. Bohnke discloses the optimized synchronization symbol sequence to achieve a high timing detection and frequency offset estimation accuracy. See abstract. At the time the invention was made it would have been obvious to modify Fullerton to include the above preamble fields of Bohnke. One of ordinary skill in the art would be motivated to do so for improve auto-correlation properties of the receiver synchronization.

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4. Claims 5, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerakoulis et al. US 7,187,647 in view of Jones et al. US 7,099,375 in further view of Miller et al. US 6,834,073.

Gerakoulis and Jones disclose all of the limitations of the claims except for ultra-wideband pulses comprise codes selected from group of hierarchical codes, Golay codes, orthogonal Golay codes, m-sequence codes, Kasami codes and Walsh codes. Miller discloses use of Golay codes in ultra wideband system. See column 10, lines 36-41.

At the time the invention was made it would have been obvious to a person of ordinary skill in the art to modify the combination of Gerakoulis and Jones with use of Golay codes. One of ordinary skill in the art would be motivated to do so for proper channel estimation.

5. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fullerton et al. US 7,027,425 in view of Bohnke et al. US 6,738,443 in further view of Rice US 5,463,657.

Fullerton and Bohnke disclose all of the limitations of the claim except for synchronization section comprises a plurality of discrete synchronization sequences, with at least one or more synchronization sequences having a reverse polarity relative to other individual synchronization sequences in synchronization section. Rice discloses to facilitate synchronization of code blocks, the polarity of transmitted sequences are inverted after some amount of consecutive sequence periods. The

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polarity inversion indicating the boundary of a codeword. See column 13, lines 1-16.

Examiner believes this teaches idea presented on page 33 of instant specification which discloses reversing the polarity of one or more synchronization sequences improves probability of correct detection at end of synchronization period.

At the time the invention was made it would have been obvious to modify the combination of Fullerton and Bohnke with synchronization sequences having reverse polarity as in the reverse polarity in Rice. One of ordinary skill in the art would be motivated to do this to facilitate synchronization of code blocks. See column 13, lines 13-16.

### ***Response to Arguments***

6. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. Examiner appreciates detailed description of prior art.

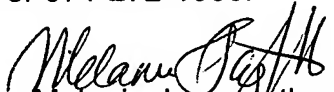
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melanie Jagannathan whose telephone number is 571-272-3163. The examiner can normally be reached on Monday-Friday from 8:00 a.m.-5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wing Chan can be reached on 571-272-7493. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system: Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Melanie Jagannathan  
Patent Examiner  
Art Unit 2616  
September 13, 2007